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DATAMATION 86

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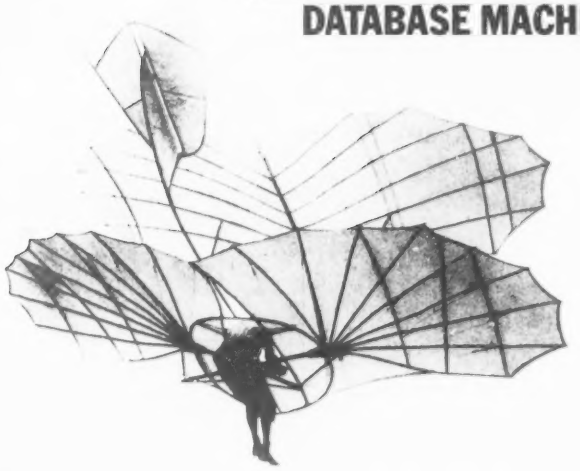
WILL IT FLY?
BETA SITE REALITIES

ALSO:

1986 DP BUDGET SURVEY
IBM TIPTOES INTO INDIA
DATABASE MACHINES



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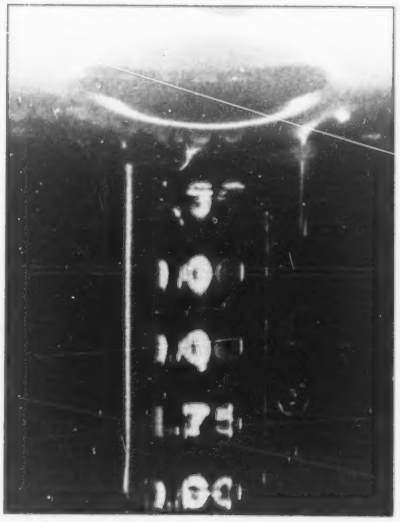

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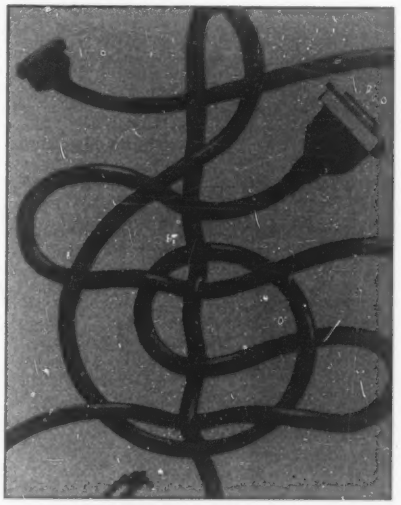

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Japan's dp business with the Asian nation may finally be picking up steam.

A SLOW PASSAGE TO INDIA

by Thomas Murtha

Frustrated by bureaucratic red tape and severe business restrictions, Japanese vendors have been reluctant to take their dp wares India. But now that some of those hurdles have been removed, Japanese dp business with the South Asian subcontinent could pick up substantially.

"The Japanese presence in the Indian computer market has been minimal because we haven't found conditions appropriate for establishing or expanding production capacity in India," explains Masafumi Misu, an advisor to Hitachi's board of directors. "Hitachi has been approached by Indian entrepreneurs in the computer business. Some of them were former IBM employees. We negotiated, but as with every deal in India, the government was very involved and moved slowly.

"The Indian intention seemed to be to negotiate with many competitors in an effort to get the best deal," says Misu, who is also vice chairman of the Japan Machinery Exporters' Association. "Such an attitude discouraged us because it became very difficult to have confidence in a potential partner. They also wanted us to have full responsibility for the performance of a company in which we have no capital investment. We weren't enthusiastic about dealing with Indian business in this way. That was several years ago. Now the situation appears to be changing."

The Indian government claims that its recent efforts to promote the nation's dp sector provide new opportunities for foreign participation. Prime Minister Rajiv Gandhi's visit to Japan last November is also an encouraging sign for that country.

Following the first significant reduction of computer import restrictions in 1983, India continued to loosen controls. Last year, most of the old licensing policies were liberalized to emphasize promotion rather than regulation of the computer industry. The remaining restrictions, however, still effectively lock up the industry for locals. Outside ownership of local dp manufacturing operations, for example, is not allowed to exceed 40%, and stiff import duties protect dp wares manufactured in India from cheaper foreign competition.

The situation was even worse for foreign firms two to three years ago. Japanese vendors in particular have had an uphill battle trying to sell large-scale systems in India. The notable exception here was NEC, which successfully bid four ACOS series computers in 1984 for India's National Informatics Center Network (NICnet). One year later, when the Indian government chose to import technology for production of 1MIPS mainframes, no Japanese company even submitted a proposal. Competition soon narrowed down to Bull of France and Control Data, which ended up winning the $500 million contract in February.

Although Japanese computer sales to India are still small, there has been a sharp surge in exports under the more liberal policies of Rajiv Gandhi's administration. Japanese sales of dp hardware to India more than tripled in 1985, reaching a record high of $17.8 million. Telecom exports also grew a hefty 36.5% in 1985 to $62.8 million.

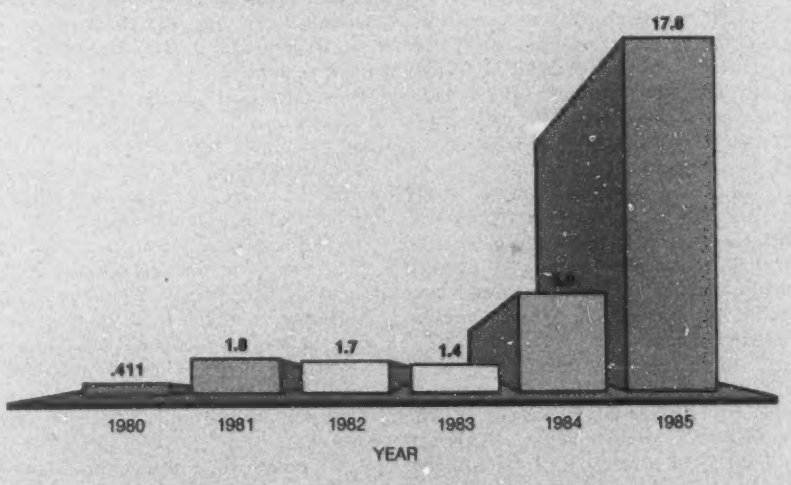
This brighter export picture is a reflection of India's increasing willingness to do dp business with outsiders. "Following the liberalization of our policies in 1984 and 1985, we explained the changes to Japan and other nations with technological expertise," points out Paratha Das, counselor for science and technology at the Indian embassy in Tokyo. "We requested that [the Japanese] develop their strategies for cooperation with India in light of these changes. So far we have not received final responses from Japanese corporations. It seems they are taking the time necessary to understand our position and to formulate their own. This is the normal Japanese way of doing business.

"The Japanese don't appear as ag-

FIG. 1

JAPAN'S DP EXPORTS TO INDIA

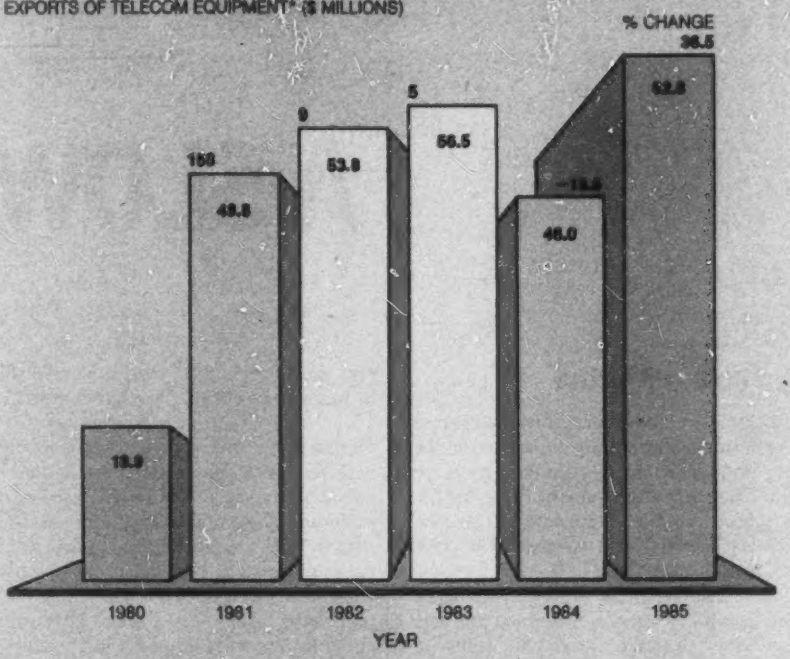
EXPORTS OF DP EQUIPMENT* ($ MILLIONS)



*INCLUDES PERIPHERALS AND CPUS

SOURCE: MINISTRY OF INTERNATIONAL TRADE & INDUSTRY'S SOUTH ASIA DIV. AND DATAMATION ESTIMATES.

FIG. 2
JAPAN'S TELECOM EXPORTS TO INDIA



*INCLUDES WIRE AND WIRELESS TELECOMMUNICATIONS EQUIPMENT, COMPONENTS, AND PARTS.

SOURCE: MINISTRY OF INTERNATIONAL TRADE & INDUSTRY'S SOUTH ASIA DIV. AND DATAMATION ESTIMATES.

gressive as their counterparts in America and Europe," contends Das. "They are more cautious. We understand the necessity of careful evaluation before making a commitment. But we eventually hope to reach some agreements for technology exchanges with the Japanese."

ANXIOUS TO INK DP PACTS

The Japanese, worried that their high-tech rivals have gotten the jump on them in this emerging market, are also anxious to ink dp pacts with the Indians. "Europe and America are our main competitors in foreign markets," observes Yasuo Fujimoto, a South Asia specialist for international trade policy with Japan's Ministry of International Trade & Industry (MITI). "Their computer firms, especially America's, are rushing to India after Rajiv Gandhi called for liberalizing the import of high tech. If Japanese firms don't act now," he warns, "the Indian computer market will be sewn up by the Americans and Europeans."

Last year, India signed technology exchange agreements with both the U.S. and Japan. That should make business life in India better for the Japanese as long as they play by the rules established by the Coordinating Committee for Multilateral Export Controls (Cocom).

"Since India is not an Eastern Bloc nation, there aren't any direct restrictions on technology transfer from Japan," explains Michio Hamano, the deputy director of MITI's export security control office. "However, we do have to be careful to ensure that computer and other high-tech exports to India are not diverted to the Soviets. With mainframe computer installations in India, for example, we're concerned about Soviet technicians having access. The Americans are very anxious about this at present and we make every effort to respect these concerns in our approval of export licenses."

Japanese firms have had an easier time in India peddling telecom products, since these wares have fewer Cocom controls. There's also less reason for concern because India has agreed that end-user sites can be inspected for imported computer and telecom gear.

"Japanese government policy is often affected by U.S. policy," according to Tadaharu Kobayashi, manager of the Southwest Asia division at NEC. "Although we have to be careful about exporting to India in general, in the field of telecommunications we expect fewer problems."

The Japanese have been careful in all of their dealings with the Indian nation. "Of course we're cautious about investing in India and transferring technology," says one Japanese trade official. "Indian technocrats and industrialists claim to be able to produce anything if they are provided with the technology. But many Japanese are skeptical about such claims."

The trade official goes on to complain about the bureaucratic and business procedures that can bog down a company. "The simple fact is that most industry in India is not in the hands of the private sector. In New Delhi, 70% of the total work force is directly or indirectly part of the government bureaucracy. And where there is that big a bureaucracy, someone is always asking for baksheesh to get something done. Japanese don't like to do business when the electrical supply and telephone service may depend on a bribe."

There is, however, some optimism at the end of the Japanese offical's diatribe. There's also a familiar bottom line. "Maybe the Indian computer industry can become more streamlined and efficient. Japanese business is willing to help develop the industrial infrastructure, but only if there's a reasonable chance for a return on investment."

India, which wants those same returns, is hedging its high-tech bets by not putting all its chips on any one country. "The Indians clearly want Japanese computer firms to invest in their country," declares MITI's Fujimoto. "One of the reasons is that they want the best production technology available. But at the same time, they don't seem to want to rely too much on Japan for training and basic technology. It could also be because of linguistic differences as well as the perception that America is more advanced in strategic areas like software."

TELECOM FIELD DIFFERENT

It's a different story in the telecom field, where firms like Fujitsu hope that technology training will give them a leg up on their foreign competitors. So far, Fujitsu has floated successful Indian tenders in three areas—fiber optics, microwave relays, and digital mulitplexors.

"Our bids are strong because we are competitive not just in pricing, but also in operating reliability and training," claims Takashi Suzuki, Fujitsu's manager of communications systems marketing for Southwest Asia. "We have a policy of offering comprehensive training that we hope gives us an edge over European and American competitors. They still often sell technology in a black box, leaving the Indians to figure it out."

The black box approach contradicts India's desire to foster self-reliance and the ability to tailor technology to the nation's needs. The Center for Development of Telematics (C-DOT) in New Delhi is one ex-

FROM SHRIMP TO SOFTWARE

It's a long way from shrimp to software, but India is hoping it will be able to close that gap by exporting to Japan more computer programs than crustaceans by the year 2000. In 1984, Japan imported $247 million worth of shrimp from India—roughly the same amount of revenue the Asian nation hopes to pull in from software sales to Japan by 1990.

India wants to use this software hook to nail Japanese hardware technology. "In international negotiations for economic cooperation, you have to give something to get something," explains Paratha Das, counselor for science and technology at the Indian embassy in Tokyo. "Japan is trying to develop software expertise because its computer industry needs to be as strong in software as it is in hardware. It seems reasonable that Japanese corporations should share hardware technology with India to get software technology."

While this sounds like a great idea in theory, the Japanese are skeptical about how it would work in practice. Cultural and linguistic differences are the first stumbling blocks that crop up when considering such deals. "The policy of a software-hardware exchange is a good idea, but it would be difficult to realize on a wide scale," cautions Masafumi Misu, an advisor to Hitachi's board of directors. "One reason is that English isn't very popular in Japan. Since software development is abstract and requires an extensive ability to communicate, it would be difficult for Japanese to work with Indians."

"India wants to export software to Japan, but we have different business practices, so there will be problems," adds Yasuo Fujimoto, a South Asia specialist for the International Trade Policy Bureau at Japan's Ministry of International Trade & Industry. "Even if Indians can adapt to the needs of our business culture, then success in the Japanese market will still depend upon the price and quality of the software they produce."

Ironically, cultural differences may help Indian software score big with Japanese end users. "I don't see why India can't become a major software producer for many different requirements," reasons Edward Ploman, vice rector for the global learning division of the United Nations University in Tokyo. "Indians are born tinkerers and the nation has a tradition of excellence in mathematics and basic science. This combination of skills establishes the intellectual infrastructure needed for producing software.

"The Indians know what diversity is because they live with it," explains Ploman. "In contrast, the Japanese have made uniformity their strength. In its obsession with quality control and uniformity, Japan is stronger than any other nation—not just India. Quality control is necessary but not sufficient for producing good software. You need something else, a different way of looking at things. Japan can benefit from greater cooperation with India in this area. If these two cultures can reach an understanding, they would complement each other."

Looking for such complementary setups, NEC is currently considering an Indian offer to provide software support for the systems it sells in India and elsewhere. "The Indians say they have software capability, so we're planning to use it to support the mainframe systems we'll supply for the department of electronics' National Informatics Center Network," says Tadaharu Kobayashi, manager of NEC's Southwest Asia division.

Another NEC need on the software side that the Indians might be able to answer is for program conversion. "If we supply computer systems to users of IBM, CDC, or DEC systems," continues Kobayashi, "there's going to be a need for software conversion. In this area, Indians can utilize their capabilities. But at the moment we don't know enough about the quality of their software. If we can successfully cooperate with India in this area, we may set up software centers there in the future."

The education that such centers provide will be sorely needed if India hopes to build its software muscle. "Additional investment in education and the experience that comes with time should help spread software skills beyond the educated elite," points out Tsugio Kusajima, director of the international communications department of the Japan External Trade Organization. Kusajima, who recently returned from a fact-finding trip to India, says that "the software market in India has great potential, but it's not yet ready for harvest. Once IBM returns to India the stakes change. Japan is watching and waiting."

One Japanese company that has already successfully used Indian programmers for modifying an applications software package is JSE International. Working with software house Stella Systems in the States, JSE developed dChart, an add-on graphics utility for a microcomputer database package. The software was modified in India to run on an IBM PC for overseas market consumption.

Cutting costs was a key consideration in using Indian progammers. "In order to be successful overseas, it's going to be increasingly important to get quality programmers at a cheaper price than they would cost in Japan," explains Bill Smale, executive vp for JSE International.

Smale's initial success with Indian software underscores the complementary nature of two different dp cultures. "India offers the programming know-how and resources at a more moderate price than the Japanese software industry can. But equally important is the fact that Indian individualism is available to Japanese who need that facet of creativity for moving a software product from a Japanese culture to foreign cultures. Much of that software resource can be found in the Indian people who used to work for IBM. They have the Western individualism combined with Eastern patience that makes the Japanese feel comfortable."

—T.M.

ample of Indian efforts to develop appropriate communications technology. Both NEC and Fujitsu have working relationships with C-DOT.

"Western communications equipment has seldom been designed for operating conditions in developing countries," points out Edward Ploman, vice rector of the global learning division at the United Nations University (UNU) in Tokyo. "India is going after high technology from a very basic level and building up the types of sophisticated equipment it needs that will work under severe operating conditions with very low maintenance requirements. Some Japanese companies recognize that they have much to offer and much to learn by participating in such projects."

The Japanese are already looking for ways to capitalize on India's experience in developing appropriate technology for third world countries. NEC, for instance, is considering tapping Indian know-how for Middle Eastern markets.

"Our Indian associates have offered to supply operational maintenance for telephone switching equipment we sell to countries in the Middle East," reveals Tadaharu Kobayashi, manager of NEC's Southwest Asia division. "We think the proposal is worth considering. This is one type of cooperation that would benefit both NEC and India."

It looks as if India's penchant for self-reliance is beginning to bear fruit. Using competition to wrangle the best deals out of multinationals is slowly allowing the nation to develop the technological base for an indigenous dp industry. But too much reliance on American multinationals represents a risk that India can reduce by continuing to seek closer ties with Japan.

"Although it's not something you publicize, the Indians know there is a risk in becoming too dependent on the U.S.," surmises UNU's Ploman. "Foreign policies can change. Who knows what will happen tomorrow? Perhaps the U.S. will increase restrictions on the export of high technology. The Japanese might take longer to make a commitment, but they might be a safer bet for India in the long run because they are less likely than the Americans to capriciously change policies." ◉

Budget growth will be sluggish this year, as spending for personal computers and consultants slows.

1986 DP BUDGET SURVEY

by John W. Verity

Now entering its second year of economic difficulties, the computer industry may find this year as hard as last, if 1986 data processing budget forecasts are any indicator. Perhaps harder.

Growth in dp spending has slowed significantly during the past year. A random sampling of dp budgets from some 600 U.S. sites shows an average increase over 1985 of only 4.2%. Compared with the 7.4% average increase recorded in a similar survey last year, this diminutive rise seems to bode poorly for industry orders and signal a general tightening of belts among users.

Among the entire universe of respondents, the average total budget expected for 1986 in this year's DATAMATION Data Processing Budget Survey is $1.72 million, $70,000 more than the $1.65 million budgeted in 1985. Among the smaller group of Fortune 1,000 companies responding to the survey (see "Survey Method"), the average total budget is expected to move only slightly, if at all—to $3.2 million in 1986 from $3.15 million last year.

The slowdown in dp spending growth reflects, but nevertheless seems to exceed, poor growth in annual corporate revenues. Most sectors of the current economy are still relatively stagnant. While the average dp budget will increase by 4.2%, the 1986 survey finds that average corporate revenue is expected to rise only 3.1% this year over 1985.

Growth among the smaller companies surveyed this year—those not included in the Fortune 1,000 list—was expected to rise by a much higher rate, 13%. Their dp budgets promised to rise faster as well—6.6%, compared with the 5.5% increase among Fortune 1,000 companies.

So, even as Wall Street, IBM, and the industry as a whole fret and try to live without the heady rush of growth they experienced just a few years ago, dp spending is, in fact, a bright spot in an otherwise fairly bleak economic landscape, a sign of strength that other economic sectors will find hard to match. Don't give up yet on this year's contribution to the "information age."

While the strongest growth in dp budgets between 1985 and 1986 was found in such industrial sectors as computer manufacturing and utility communications, several sectors, including education and government, predicted a decline in their dp spending this year.

A look at individual line items in the budget survey reveals shifting spending patterns among large and small users as they attempt to consolidate and rationalize the widespread installation of personal and departmental computing gear.

For the second year in a row, spending on personal computers has tapered off. Prior to 1985, surveys showed fantastic growth in this category as millions of the small machines were installed into every nook and cranny of the corporation. The machines were so inexpensive and seemingly useful that in many cases they had become status symbols to be ordered merely for appearance's sake. Just about all those who could productively use a personal computer had access to one by last year, it seemed. Budget administrators then began to

hold back on spending for more. While no one knows whether or not yesterday's personal computers are sitting idly in a closet somewhere, spending on pcs as a fraction of total dp spending will be down again this year. Where 1985 respondents said that 9.2% of their total budget went to pcs, this year they will spend only 8.6%. That is a considerable 6.5% average drop in that category's share of overall dp budgets.

The average drop in pc spending, however, masks important differences between Fortune 1,000 companies and smaller business concerns. Among the Fortune 1,000 companies, which buy in quantity and often resell personal computers as part of their product offerings, spending in this category will go up by 7.6%—to 5.9% of the total budget from 5.2% last year.

Pc spending among small companies, on the other hand, will show a 12.6% decline—to 9.7% from 11.1%.

The survey also revealed a severe fractional drop in spending for single-function, desktop systems, which reflects the personal computer's widespread popularity, its ubiquity as a standalone computing device, and its technical flexibility. This category includes the word processor, which evidently has long passed its liveliest days.

DROP IN SINGLE-FUNCTION

Compared with the average 8.6% of their budget that dp managers will spend on pcs this year, they will spend only 0.4% on single-function desktop systems. Among all sites surveyed, this category's fraction of the total dp budget will fall 20%, to 0.4% from 0.5%. Among the largest responding companies, however, there will be a slight increase (to 0.6% from 0.5%).

The personal computer's widespread impact is evident throughout the survey. The budget categories of data communications and nonmainframe system software show particularly strong gains this year. Apparently users are moving to connect the many standalone systems they've installed over the past few years. Local networks, PBXs, and other connection schemes are widely expected to show strong if not excellent growth this year.

Users will be trying to do more for themselves in the months ahead, writing more of their code and planning more of their systems. Taken as a whole, they will depend less on independent consultants and have budgeted 17% less in specified funds for this kind of help than they did last year. By the same token, spending on outside services, such as timesharing and contract programming, is expected to drop as a percentage of the whole dp budget—to 3.3% of the total, on average in 1986, from 3.7% last year.

Ironically, however, users are building data communications into their systems more than ever. The complexity of those connections would generate, it would seem, more need for outside expertise. In any case, datacom spending, apparently driven by the need to tie personal and departmental computers together with mainframes, stands to go up by an average of 30% in 1986 compared with the previous year. Among Fortune 1,000 companies, datacom spending will be up 44.4% as a share of total dp spending. Among the remaining firms, growth will be a not inconsiderable 24%, according to the survey.

Again, as seen last year, a declining share of dp budgets has been set aside for mainframe processors. Compared with the average fraction of 12.2% marked for mainframes last year, in 1986 there will be only 11.9%—a small, but continuing, 2.4% decrease. Among Fortune 1,000 companies, who provide IBM and other mainframers with most of their revenues and profits, mainframe spending seems to be just holding its own. It remains at 15.4% for the second year in a row.

As a fraction of total spending, mass storage and memory will be down even more, by 5.9% on average and by 30% among Fortune 1,000 companies. It's not clear why there are such decreases, however. It's widely believed that disk drives are being installed at a high rate to keep up with growing on-line applications and databases.

The minicomputer category has seen a drop, too. On the whole, respondents said they had used 10.8% of their 1985 budgets on minis, but they would use only 10.4% this year. The large, Fortune 1,000-class sites showed a slightly steeper drop—to 8.2% in 1986 from 9% in the previous

FIG. 1
THE TYPICAL DP BUDGET

BUDGET ITEM	ALL SITES 1985	ALL SITES 1986	FORTUNE 1,000 SITES 1985	FORTUNE 1,000 SITES 1986
Personnel	31.3%	32.6%	33.2%	34.2%
Mainframe cpus	12.2	11.9	15.4	15.4
Minicomputers	10.8	10.4	9.0	8.2
Mass storage/memory	3.4	3.2	4.6	3.6
Terminals	4.1	4.0	5.0	4.6
Single-function desktops	0.5	0.4	0.5	0.6
Personal computers	9.2	8.6	5.2	5.9
Printers and peripherals	3.4	3.1	3.3	2.9
Applic. software (nonpc)	2.7	2.9	2.4	2.3
Systems software (nonpc)	1.9	2.1	2.1	2.1
Pc software	2.3	2.1	0.9	1.0
Data communications	2.7	3.5	3.1	4.3
Consultants	1.8	1.5	1.6	1.1
Outside services	3.7	3.3	3.0	2.6
Supplies	6.3	6.7	6.0	6.4
Overhead, rent	3.7	3.7	4.7	4.7

FIG. 2
CHANGES IN DP BUDGETS BY INDUSTRY, 1985 VS. 1986

INDUSTRY SECTOR	ALL SITES	FORTUNE 1,000 SITES
Survey Average	4.2%	5.5%
Manufacturing—edp	2.2	6.2
Manufacturing—other	2.8	3.2
Edp services	6.2	−0.3
Government	5.9	NA
Education	3.9	NA
Finance	7.2	5.6
Retail/wholesale trade	9.1	0
Medical/legal services	5.4	0
Transportation	0.3	−0.1
Utilities/communications	9.7	12.6
Construction, mining, agriculture	2.9	0
Other business services	1.3	−4.8

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CIRCLE 37 ON READER CARD

Users will be writing more of their code and planning more of their systems in the months ahead.

SURVEY METHOD

The 1986 DATAMATION Data Processing Budget Survey attempted to reach a cross section of United States users from a wide variety of industrial sectors. Results were tabulated for all sites, for sites that are listed in the Fortune 1,000, and for those that are not on the Fortune 1,000. As such, the poll was designed to reflect the magazine's readership.

The survey began in early December when 5,000 questionnaires were mailed to a random sample of DATAMATION subscribers. A total of 608 responses were received by Jan. 10, a third coming from Fortune 1,000 sites.

Almost half (47%) of the responding individuals identified themselves as managers in computer/systems operations; another 19% are in corporate management. As for industry sectors, the largest category of responding companies was nondp manufacturing at 26%, followed by computing services at 12% and finance at 11%. Some 71% of the responding sites were the headquarters of their respective organizations.

The respondents indicated an average of $291 million in yearly corporate revenues for 1985 and an estimated $300 million for 1986. The average data processing budget for 1985 was $1.65 million and is expected to be $1.72 million this year. For 1986, for instance, they range from less than $10,000 (7.1% of the total sample) to more than $5 million (14% of the total). The average employment for all sites was 2,280 people during 1985, but a quarter of the companies (156 sites) had less than 100 employees in total.

This year's survey did not ask about spending on data processing goods and services that takes place outside the official data processing budget itself. Previous surveys have found such outside spending to be relatively significant. Because of that and some other minor changes, this year's dp budget survey is not directly comparable to the one taken last year.

—J.W.V.

year. Unlike some other software categories, microcomputer software as a whole is expected to show an average decline in its share of total budgets—the category stands to experience an 8.7% drop, to 2.1% this year from 2.3% before. The drop is even greater (13%) for non-Fortune-class sites.

Excluding personal computers, applications software is gaining increased budget attention. Its share of the pie last year was 2.7%, but this year it will garner 2.9%. In contrast, among Fortune 1,000 sites there promises to be a drop (a perhaps insignificant 3.7% decline) to 2.3% from 2.4% of the total.

MINI & MICRO SW IS UP

Minicomputer and microcomputer systems software will probably do much better than applications software. Users on average are expecting to devote 2.1% of their total budgets to mini and micro software, up about 10% from last year's figure of 1.9%. Evidently, small sites will boost their spending in this area even more, about 11% from 1985 to 1986.

Overhead expenses, including such items as utilities and rent, remained level, as a whole, claiming an average of 3.7% of the total dp budget. Supplies, on the other hand, took an increased share of 6.4%, to a total of 6.7% of the total dp bill.

As always, the biggest budget category is personnel. On average, 32.6% of the total 1986 dp budget will go toward salaries and other personnel expenses, up a slight 4.2% from last year's share of 31.3%. This fractional growth was slightly lower among large, Fortune 1,000 sites, where this year's share will be 34.2%, only 3.2% higher than last year.

The average site in this year's survey employed 24.9 dp people last year. But cost-cutting is the name of the game this year and, as a result, that number is expected to rise to only 26.1. The largest, Fortune-class sites will see average dp employment go to 43.8 persons this year from 42.8 last year; smaller sites were found to have a higher employment growth, up 8.2% to an average of 17 people this year.

For the first time, this year's survey delved into the factors that determine future budgets. Users as a whole indicated that company growth is the main influencing factor, followed by expenditures for the prior year, new software products, and personnel costs. Evidently, the rise of software product prices, especially important systems software from IBM, is making itself felt on the dp shop's bottom line. ◉

The complete 1986 data processing budget survey, including data from all industry sectors and company size categories, is available from DATAMATION for $150. To order a copy, please call Laurie Schnepf, director of market research, at (212)-605-9679.